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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/792,078	03/03/2004	Yong Shen	42085-00031USD2	4219

7590 08/10/2005

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EXAMINER

MILLER, BRIAN E

ART UNIT

PAPER NUMBER

2652

DATE MAILED: 08/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/792,078	SHEN ET AL.	
	Examiner	Art Unit	
	Brian E. Miller	2652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 25 May 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-5,8 and 9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-5,8 and 9 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 03 March 2004 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

This application is a DIVISIONAL of 10/317,878, which in turn is a DIV of 09/265,083, and claims 1-5, 8-9 are now pending.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/6/05 has been entered.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Drawings

3. The drawings were received on 5/6/05. Although the changes to the figures were noted as acceptable, this replacement drawing sheet is unacceptable as they are not in compliance with 37 CFR 1.121(d), i.e., labeled appropriately, e.g., "Replacement sheet."

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "40", "42" and "62", "64" have both been used to designate a longitudinal bias layer and lead layer "stack", as shown in FIGS. 1A & 1B and 4A & 4B. The same elements should be represented with the same numbers to avoid confusion.

5. The drawings are further objected to because (a) FIG 1B is inconsistent with at least FIG. 2 as FIG. 1B appears to represent a right side portion of FIG. 2, however, reference numerals

“40”, “50” would be consistent with the *right* side. Numerals “42” and “52” should be used for consistency. Furthermore, although reference numeral “30” indicates the SAL layer, numeral “34” would be more consistent since only the end portion is shown in this figure.

6. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the (a) “the first and second conductive layers are not a same layer”, as recited in claim 1. No new matter should be entered. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled ‘Replacement Sheet’ in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

7. A substitute specification excluding the claims is required pursuant to 37 CFR 1.125(a) because the number and nature of the amendments throughout prosecution render it difficult to consider the application. A substitute specification with all the changes made during prosecution would greatly help the Examiner. Furthermore, upon allowance of the application, it would reduce possible errors during printing or copying. Additionally, all the changes made in the co-pending applications, e.g., 10/317,878, should be consistent and since they presently are not, this is a further reason for the substitute specification.

A substitute specification must not contain new matter. The substitute specification must be submitted with markings showing all the changes relative to the immediate prior version of the specification of record. The text of any added subject matter must be shown by underlining the added text. The text of any deleted matter must be shown by strike-through except that double brackets placed before and after the deleted characters may be used to show deletion of five or fewer consecutive characters. The text of any deleted subject matter must be shown by being placed within double brackets if strike-through cannot be easily perceived. An accompanying clean version (without markings) and a statement that the substitute specification contains no new matter must also be supplied. Numbering the paragraphs of the specification of record is not considered a change that must be shown.

8. The disclosure is objected to because of the following informalities: (a) In the "Brief Description of Drawings" there is no reference to figures 3a, 3b, 3c, 3d; (b) Figs. 3c, 3d are not described in the specification.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. Claims 1-5, 8-9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. As is now recited in claim 1, last line “wherein the first and second conductive layers are not a same layer” constitutes new matter, as it was not described in the original specification. As set forth in co-pending application 10/317,878, these so-called “conductive layers” (40, 42) are described as a lead layer and longitudinal bias “stack”, however, are indicated as a longitudinal bias layer 40 and lead layer 42 in the present specification. This inconsistency in these two applications renders the specification(s) as unclear. In addition to that, the language in the claim is not clear as it is not readily apparent what would encompass “not a same layer,” since no where in the specification is this described or depicted.

Appropriate corrections are required.

Claim Rejections - 35 USC § 102

11. Claims 1-5, 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Koga et al (US 5,442,507). In so far as the claims are clear and understood, Koga et al discloses an MR head, as shown in at least FIGS. 3-6, including: a MR layer 106 having a first and second end; a SAL

layer 104 having a first and second end; an insulating layer 105 of SiO₂ (for example-see col. 3, lines 30-31) having a thickness of 100-300 angstroms (for claim 8) arranged between the MR and SAL layers; first and second conductive layers (at least including layer 110, each contacting electrically both the MR layer and the SAL element at one end (see FIGs. 5 & 6); the width of the SAL extends beyond the active region of the MR layer, the MR layer supporting a first current path (through the active region of the MR element-re claim 2) between the first and second conductive layers (also shown in FIG. 4-see col. 3, line 58-col. 4, line 7), the SAL 22 supporting a second current path between the first and second conductive layers; wherein the second current path is substantially longer than the first current path (due to the extension portion of the conductive layers); (as per claim 3) wherein the first and second conducting layers have an extending portion directly in contact (via contact portion 110a) with the top surface of the MR layer (see FIG. 4), such that an active region of the MR element is formed between the two conducting layers (sense region "T"); (as per claim 4) wherein the thickness of the MR layer is more than 50 but less than 400 angstroms, e.g., 200-500 angstroms (see col. 3, lines 32-34); (as per claim 5) it is further considered that since Koga et al teaches all of the elements as set forth in claim 1 and the SAL layer is "less than 500 angstroms", e.g., 220 angstroms (col. 5, line 33) it is at least inherent that the moment ratio would fall into the 0.6 to 1.0 range as set forth in the claim.

*As to the newly recited claim language; "and wherein the first and second conductive layers are not a same layer," is so far as this language has been described in the specification and is clear, it is considered to be met by Koga et al as lead layer 110 has a space therebetween (as shown in the drawings) which is interpreted to encompass "not the same layer".

Claim Rejections - 35 USC § 103

12. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koga et al. For a description of Koga et al, see the rejection, *supra*.

Koga et al remains expressly silent as to the claimed (a) insulating layer being formed of Al₂O₃, although arguably could be included within the suggested "or the like" (see col. 3, line 31) in the disclosure thereof. The insulating material Al₂O₃ is well known to be interchangeable with SiO₂ and substituting one for the other would have been within the level of a skilled artisan.

The motivation would have been: lacking any unobvious or unexpected results, substituting one material for another material with like characteristics would have resulted from routine engineering experimentation.

Double Patenting

13. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

14. Claims 1-5, 8-9 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-9 of U.S. Patent No. 6,583,971. Although the conflicting claims are not identical, they are not patentably distinct from each other. The

pending claims recite “an extending portion” with respect to first and second conductive layers while the patent remains silent to such language. As both the patent and instant application recite direct or physical contact between the conductive layer(s) and the MR layer, it would be considered that the addition of the aforementioned “extending portion” would not patentably distinguish the pending claims with the patent. It would have been obvious to have omitted the “extending portion(s)” from the pending claims, as the conductive layer(s) would still maintain the same function in directly contacting the top surface of the MR layer. Removing the extending portion would have been readily realized by a skilled artisan and considered obvious.

Response to Amendment

15. Applicant's arguments filed 5/6/05 have been fully considered but they are not persuasive.

A...In view of comments made by applicant and other observations by the Examiner with respect to the drawings, more objections have been made, as set forth herewith.

B...The claims are considered to include new matter and further a substitute specification has been requested due to many inconsistencies therein and with co-pending application 10/317,878, as set forth above.

C...Applicants assert on page 8 of the “REMARKS” that “Because US5442507 (Koga et al.) fails to disclose the claim element ‘first and second conductive layers [that] are not a same layer,’ US5442507 (Koga et al.) does not anticipate claims 1-5 and 8.”

In response, in so far as this newly added limitation finds support in the instant specification, the space between the lead layer(s) 110 of Koga et al is considered to encompass this limitation.

Art Unit: 2652

The section that applicant points to in Koga, e.g., col. 6, lines 32-36, does not appear to specifically say how many "layers" the lead layers 110 include, either, to obviate the use of the Koga reference.

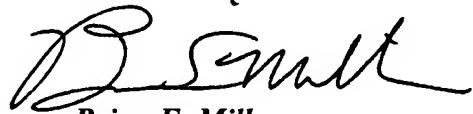
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian E. Miller whose telephone number is (571) 272-7578. The examiner can normally be reached on M-TH 7:15am-4:45pm (and every other Friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (571) 272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Brian E. Miller
Primary Examiner
Art Unit 2652

BEM
August 3, 2005